Agilent ChemStation for GC Systems

Installing Your Agilent A/D ChemStation

Agilent Technologies

Notices

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In This Manual...

This manual is intended to serve the needs of customers who want to install the Agilent Technologies A/D ChemStation. It provides information on how to prepare the PC for the use of the new Agilent A/D ChemStation software, including configuring, installing, upgrading, and uninstalling procedures for the software and communication hardware, as well as containing troubleshooting documentation.

This manual assumes:

- You are familiar with the use of Microsoft® Windows® 2000 Professional or Windows XP Professional operating systems.
- You will be installing the software on a PC meeting the minimum hardware requirements.
- Your instruments and communication devices are compatible with this version of Agilent ChemStation.

The Agilent ChemStation software communicates with analytical equipment via LAN data communications.

The manual presents information as described below.

1 Installation Preparation - This chapter gives an overview of the Agilent A/D ChemStation software and learning products.

2 Installing Local Area Network (LAN) Communications - This chapter describes how to install the Local Area Network interface board in your computer.

3 Installing Agilent Bootp Service - This chapter describes how to install and configure the Agilent Bootp Service.

4 Installing the Agilent A/D ChemStation - This chapter describes how to install the new Agilent A/D ChemStation software.

5 Configuring the 35900E - This chapter describes how to configure the 35900E A/D interface.

6 Validating and Starting the Agilent A/D ChemStation - This chapter describes how to configure, validate, and to start your newly installed Agilent A/D ChemStation.

7 Troubleshooting - This chapter provides troubleshooting documentation for those in need of assistance.

8 Additional Resources - This chapter provides an overview of the additional Agilent ChemStation resources found on the Agilent ChemStation CD-ROM and the World Wide Web, including the Agilent Response Center Support Services, the Agilent Technologies Analytical Response Center, and the Agilent ChemStation help system.

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1 Installation Preparation

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This section explains how to prepare your PC for an Agilent A/D ChemStation software installation.

Where to Start

This manual covers possible cases with procedures and information for:

- A new installation
- An upgrade of a previous Agilent ChemStation version
- An additional GC instrument module
- A bundled-package

Where to start with a new installation

For those who are performing a new installation, you will need to follow this manual from Chapter 1 through to the end. This will cover the following procedures:

1. Ensuring your PC and instruments are compatible with the new Agilent A/D ChemStation software (Chapter 1)
2. Configuring your PC and operating system (Chapter 1)
3. Setting up a LAN communication interface (Chapter 2)
4. Installing and configuring the Agilent Bootp Service (Chapter 3)
5. Installing your Agilent A/D ChemStation software (Chapter 4)
6. Configuring your 35900E with the Agilent ChemStation (Chapter 5)
7. Validating the software installation (Chapter 6)
8. Running the Agilent A/D ChemStation for the first time (Chapter 6)
9. Browsing the Troubleshooting section for solutions to common errors (Chapter 7)
10. Learning about additional resources included with your software purchase (Chapter 8)

Where to start with an upgrade

For those upgrading from a previous version of Agilent ChemStation, you will want to refer to the *Upgrade Preparation Guide for Agilent ChemStation B.01.xx*, and follow these steps:

1. Ensuring your PC and instruments are compatible with the new Agilent A/D ChemStation software (Chapter 1)
2. Configuring your PC and operating system (Chapter 1)

3 Setting up a LAN communication interface (Chapter 2,)

4 Installing and configuring the Agilent Bootp Service (Chapter 3)

5 Upgrading your Agilent A/D ChemStation software (Chapter 4)

6 Configuring your 35900E with the Agilent A/D ChemStation (Chapter 5)

7 Validating the software installation (Chapter 6)

8 Running the Agilent A/D ChemStation for the first time (Chapter 6)

9 Browsing the Troubleshooting section for solutions to common errors (Chapter 7)

10 Learning about additional resources included with your software purchase (Chapter 8)

Where to start to add an additional A/D instrument module

If Agilent ChemStation is already installed and you need to add a license for control of an additional instrument:

1 Ensure the new instrument is compatible (Chapter 1)

2 If using LAN communication, set up the new instrument (Chapter 2)

3 If using the Agilent Bootp Service, configure it (Chapter 3)

4 Configure a new 35900E A/D converter (Chapter 5)

Where to start with a bundled package

For those who purchased a bundled package from Agilent, you may want to read through this booklet for an overview of how your system can be configured. You will want to refer to steps such as:

1 Configuring your PC and operating system with the new Agilent A/D ChemStation software (Chapter 1)

2 Setting up a LAN communication interface (Chapter 2)

3 Installing and configuring the Agilent Bootp Service (Chapter 3)

4 Configuring your 35900E with the Agilent A/D ChemStation (Chapter 5)

5 Running the Agilent A/D ChemStation for the first time (Chapter 6)

6 Browsing the Troubleshooting section for solutions to common errors (Chapter 7)

7 Learning about additional resources included with your software purchase (Chapter 8)

PC Requirements

Minimum hardware requirements for your Agilent A/D ChemStation (version B.01.xx) are:

- Personal computer with an Intel Pentium IV processor (1.5 GHz or greater)
- 1024 × 768 resolution display, 16k colors or better
- 20 GB hard disk (600 MB free disk space)
- CD-ROM drive
- 256 MB RAM
- A Microsoft Windows XP Professional (Service Pack 1a) or a Windows 2000 Professional (Service Pack 4) operating environment

If upgrading, the 82341 GPIB board is no longer supported. If you have a 82341 GPIB board, replace it with the 82350 GPIB board before upgrading.

All PC hardware and peripherals must be listed in the Microsoft Hardware Compatibility List (HCL), which is available from the Microsoft home page on the World Wide Web (http://www.microsoft.com). If your PC hardware is not listed in the HCL, the system may not work correctly with the Agilent A/D ChemStation software.

Upgrade Notes

To perform an upgrade from an Agilent ChemStation Rev. A.xx.xx system to B.01.xx, please refer to the document entitled *Upgrade Preparation Guide for Agilent ChemStation B.01.xx* for detailed instructions on how to prepare your PC for upgrading. The documentation is available as a printed document and also as a PDF file, which can be found in the manual directory of the Agilent ChemStation CD-ROM.

If upgrading to Agilent A/D ChemStation revision B.01.xx, your PC must meet the minimum requirements found on page 10.

Note that the Agilent ChemStation revision B.01.xx no longer supports the following devices:

- 35900C/D Analog-to-Digital Converter
- 19405A/B Sampler Event Control Module (SECM)

Instrument Communications

The Agilent A/D ChemStation communicates to the GCs through a LAN communication interface.

The 35900E A/D converter requires LAN communications. See Chapter 2 for more information.

2 Installing Local Area Network (LAN) Communications

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This chapter describes how to install local area network (LAN) communications with Agilent instruments and how to configure them for use with the Agilent A/D ChemStation personal computer. LAN communications should be running before the Agilent ChemStation software is installed.

LAN communications apply to:

- 35900E A/D Module
- 6890N and 6850 (with LAN assembly) GCs
- 6890A, 6890 Plus, and 6850 (with JetDirect card) GCs

About the LAN

Version B.01.xx of the Agilent ChemStation software provides LAN-based instrument control and data acquisition for LAN-capable Agilent GCs and A/D controllers. You can easily control and monitor instruments by connecting them to a LAN on which the Agilent ChemStation PC resides. This allows the Agilent ChemStation PC to be located up to 100 meters from instruments it controls on an Agilent-supported standalone LAN, or anywhere in the world on a TCP/IP-based network supported by your network administrator.

Each Agilent ChemStation can support up to four instruments on the LAN.

Each device on the LAN requires a unique IP address, a subnet mask, and a default gateway.

If installing on an isolated LAN, Agilent recommends the following addresses. If installing on a site LAN, contact the site LAN administrator.

Device	Address
PC	10.1.1.100
A/D or GC	10.1.1.102 through 10.1.1.105
Subnet mask	255.255.255.0
Gateway	10.1.1.100

Agilent A/D ChemStation supports instruments and PCs with self-assigned, fixed addresses, or addresses assigned by the Agilent Bootp Service (see Chapter 3). DHCP is not supported by Agilent. See Table 1.

Table 1 LAN addressing for Agilent ChemStation*

Instrument	Model	Supported firmware revision	LAN Board firmware	Supported IP addressing method
35900E	35900E	E.01.02	JetDirect Card J4100 - K.08.32 J2552 - A.08.32	Use Bootp Service only (see Chapter 3)
6890N GC System	G1530N/ G1540N	≥ N.05.04	LAN Assembly 04.7B3	Set at GC
6890A/Plus	G1530A/ G1540A	≥ A.03.08	JetDirect Card J4100 - K.08.32 J2552 - A.08.32	Use Bootp Service (see Chapter 3) or GPIB
6850 Series II Serial Number ≥ US10413001	G2630A	≥ A.05.03	LAN Assembly 04.7B3	Set at GC
6850 Serial Number ≥ US10243001	G2630A	≥ A.05.03	LAN Assembly 04.7B3	Set at GC
6850 Serial Number ≤ US00003200	G2630A	≥ A.03.03	JetDirect Card J4100 - K.08.32 J2552 - A.08.32	Set at front panel or use Bootp Service (see Chapter 3)

* GC addressing listed for reference only. GC control requires a separate license.

Setting Up LAN Components

Installation of LAN boards

Before attaching your Agilent ChemStation PC or any of the instruments it will control to a LAN, verify they have a LAN communications interface board installed.

Connecting the 35900E to the computer

The 35900E uses Modular Input/Output (MIO) for peripheral to host communications. MIO is a standard designed to allow for maximum flexibility in data communications. The 35900E has an MIO slot on the rear panel for plug-in MIO boards.

You must install or have installed an TCP/IP LAN MIO board in the 35900E before you can connect it to the Agilent ChemStation. If the 35900E did not come with an MIO board already installed, or you are unsure as to how the MIO board in your 35900E should or does function, refer to your *35900E Users Manual* for more information on installation and functionality.

TCP/IP LAN MIO board

Use a TCP/IP LAN MIO board to connect the 35900E to the networked Agilent ChemStation.

For information about installing and connecting the TCP/IP LAN MIO board, see the *35900E Users Manual*.

LAN cabling

The Agilent-supported LAN configuration is an Ethernet IEEE 802.3 industry standard 10-Mbps 10Base-T local area network. Cabling between the hub and LAN board can be category 4 or greater UTP with RJ-45 connectors. The maximum supported cable distance is 100 meters. The only supported service for this configuration is the Agilent Bootp Service delivered on the Agilent ChemStation install disk.

LAN configurations that do not meet these specifications must be supported by your network administrator.

PC LAN drivers

Your PC installation of Windows XP Professional or Windows 2000 Professional must have TCP/IP protocol support installed. If necessary, see your Microsoft Windows documentation for details on installing TCP/IP-based protocol and the LAN board software drivers on your PC. Windows XP Professional or Windows 2000 Professional require the software drivers provided by the LAN board manufacturer.

3 Installing Agilent Bootp Service

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This section describes how to install the Agilent Bootp Service software. The Agilent Bootp Service software will assign addresses to any device that does not have the ability to set its own address.

Purpose

Agilent Bootp Service provides central administration of IP addresses for Agilent instruments on a LAN. The service runs on the instrument LAN PC, which must be running TCP/IP network protocol and cannot run a DHCP server.

When an instrument is powered on, an Agilent JetDirect card in the instrument broadcasts a request for an IP address or Host Name and provides its hardware address as an identifier. The request may continue for up to 5 minutes. The Agilent Bootp Service answers this request and passes a previously defined IP address and Host Name associated with the hardware address to the requesting instrument.

When the instrument receives its IP address and Host Name, it stops broadcasting the request. It maintains the IP address as long as it is powered on. Powering down the instrument causes it to lose its IP address, so the Agilent Bootp Service must be started. Since the Agilent Bootp Service runs in the background, the instrument will receive its IP address on power-up.

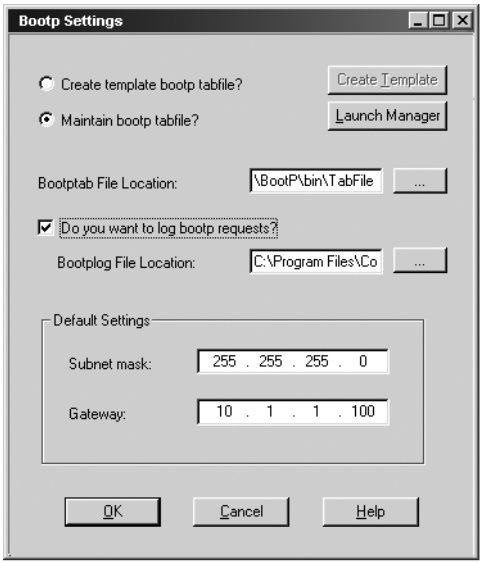
Addresses

Before installing and configuring Agilent Bootp Service, you must know the IP addresses of the computer and instruments, the subnet mask, and the gateway (see Chapter 2, “About the LAN”).

Installation

Follow the procedure below to install the Agilent Bootp Service:

1. Log on as Administrator or other user with Administrator privileges.
2. Close all Windows programs.
3. Insert the Agilent ChemStation Software CD-ROM in the drive. If the setup program starts automatically, click **Cancel** to stop it.
4. Open Windows Explorer.
5. Double-click x:\Bootp\Agilent Bootp Service.exe from the Agilent ChemStation software CD-ROM.
6. If necessary, click the **Agilent Bootp Service...** icon in the taskbar.
7. The Welcome screen appears. Click **Next**.
8. The License Agreement screen appears. Read it, then click **Yes**.
9. The Agilent Bootp Service README is available for printing. It can be accessed from C:\Program Files\Common Files\Agilent Shared\Bootp\bin\Readme.htm.
10. Files load; when finished, the Agilent Bootp Settings screen appears.
    - The Agilent Bootp Settings screen contains unconfigured default settings. These settings will be entered during the configuration procedure.
    - Type `ipconfig /all` in a command prompt window to verify the TCP/IP settings.



11 Select **Maintain Bootp tabfile**.

12 Mark the **Do you want to log Bootp requests?** checkbox.

The **Do you want to log Bootp request?** box must be unchecked when finished configuring instruments or the logfile will quickly fill up disk space.

13 In the Default Settings part of the screen, enter the subnet mask and gateway.

See your network administrator if you do not know the subnet mask and gateway.

- The default subnet mask is 255.255.255.0.
- The default gateway is 10.1.1.100.

14 Click **OK**. The Install Wizard Complete screen appears.

15 Mark the **Yes, I want to restart my computer now** checkbox.

16 Remove the CD-ROM from the drive.

17 Click **Finish** to restart the computer.

This completes installation.

Assigning IP Addresses to Instruments Using the Agilent Bootp Service

Agilent Bootp Service maintains association between a unique identification code (MAC address) provided with the LAN card installed in a given instrument and the specific IP address assigned to that instrument. Therefore, whether adding a new instrument, exchanging an instrument (or its LAN card), or changing the IP address assigned to an instrument, all require defining or redefining this association.

Configuring instruments using Agilent Bootp Service

1 Determine the MAC address of the GC with the JetDirect card installed using **either**:

- Agilent Bootp Service (see step 2)
- A JetDirect card (see step 3)

2 To use Agilent Bootp Service to determine the MAC address of the GC:

a Power cycle the GC.

b After the GC completes self-test, open the logfile using Notepad.

- The default location for the LogFile is My Computer\Local Disk\ Program Files\Common Files\Agilent Shared\Bootp\bin\logfile.
- The logfile will not be updated if it is open.
- Assign an address only to devices that cannot set their own address. See the instrument's operating documentation for more information.

The contents will be similar to that shown below:

02/25/04 15:30:49 PM
Status: Bootp Request received at outer most layer
Status: Bootp Request received from hardware address: 0010835675AC
Error: Hardware address not found in BootpTAB: 0010835675AC
Status: Bootp Request finished processing at outer most layer

c Record the MAC address (0010835675AC), here called the hardware address.

d Close the logfile before turning on another instrument.

e Skip to step 4.

3 To use a JetDirect card to determine the MAC address of the GC:

a Turn off the instrument.

b Remove the JetDirect card.

c Read the MAC address from the label.

The MAC address is printed on a label on the noncomponent side of the JetDirect card. It is the number *below* the barcode and *after* the colon (:) and usually begins with the letters **AD**.

d Reinstall the card.

e Turn on the GC.

4 Add the GC instrument to the network.

a Follow Start>Programs>Agilent Bootp Service> and select **Edit Bootp Settings**. The Bootp Settings screen appears.

b Uncheck **Do you want to log Bootp requests?**

The **Do you want to log Bootp requests?** box must be *unchecked* when finished configuring instruments or the logfile will quickly fill up disk space.

c Click **Launch Manager**. The Bootp Manager screen appears.

d Click **Add...** The Add Bootp Entry screen appears.

e Make these entries for the GC:

- MAC Address
- Host Name
- IP Address
- Comment, if desired
- Subnet Mask
- Gateway address

f Click **OK**.

g Exit Manager and power cycle the GC.

If changing the IP address, it will be necessary to power cycle the instrument for the changes to take effect.

h Ping the IP address to verify.

5 Add an additional instrument or device to the network.

   a Repeat step 4 for each instrument or device on the network that requires the Bootp service.

   b When finished, click **Exit Manager**.

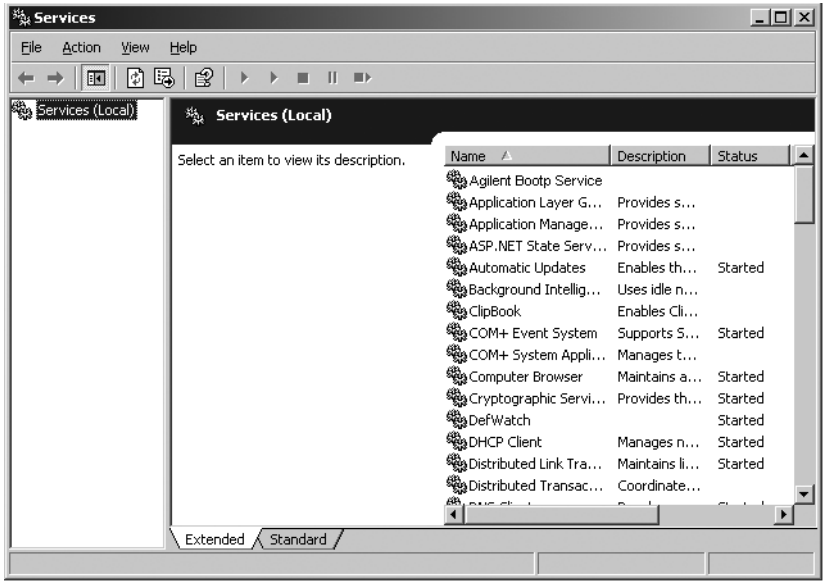
   c Click **OK**.

Configuring the Agilent Bootp Service

Bootp Service starts automatically when your PC reboots. To change Bootp settings, you must stop the service, make the changes, and then restart the service.

Stopping the Agilent Bootp Service

1 From the Windows Control Panel, go to Administrative Tools> and select **Services**. The Services screen appears.


Services
File Action View Help
Services (Local)
Services (Local)
Select an item to view its description.
Name Description Status
Agilent Bootp Service
Application Layer G... Provides s...
Application Manage... Provides s...
ASP.NET State Serv... Provides s...
Automatic Updates Enables th... Started
Background Intellig... Uses idle n...
ClipBook Enables Cli...
COM+ Event System Supports S... Started
COM+ System Appli... Manages t...
Computer Browser Maintains a... Started
Cryptographic Servi... Provides th... Started
DefWatch Started
DHCP Client Manages n... Started
Distributed Link Tra... Maintains li... Started
Distributed Transac... Coordinate...
Extended Standard

2 Right-click **Agilent Bootp Service**.

3 Select **Stop**.

4 Close the Services and Administrative Tools screens.

Editing the Agilent Bootp settings

1. Follow Start>Programs>Agilent Bootp Service> and select **Edit Bootp Settings**. The Bootp Settings screen appears.
2. When the Bootp Settings screen is first opened, it shows the default settings from installation.

Configuring the TabFile

1. Select **Maintain Bootp TabFile?** to edit the existing tabfile.
2. To change the Bootp TabFile location, use the browse button on the right (a valid Bootp tabfile must exist).
3. To create your own template for the TabFile, select **Create template Bootp TabFile?** and click **Create Template**.

   A default tabfile was created at installation and is located at C:\Program Files\Common Files\Agilent Shared\Bootp\bin\TabFile. It contains configuration information entered on this screen.

Configuring the logfile

1. Check **Do you want to log Bootp requests?**
2. To change the Bootp logfile location, use the browse button on the right (a valid Bootp logfile must exist).
3. Uncheck **Do you want to log Bootp requests?**

   A default log file was created at installation and is located at C:\Program Files\Common Files\Agilent Shared\Bootp\bin\logfile. It contains an entry for every time a device requests configuration information from Bootp.
4. Click **OK** to save the values or **Cancel** to discard them. The program ends.

Restarting the Agilent Bootp Service

1. In the Windows Control Panel, go to Administrative Tools> and select **Services**. The Services screen appears.
2. Right-click **Agilent Bootp Service** and select **Start**.
3. Close the Services and Administrative Tools screens.

This completes configuration.

3 Installing Agilent Bootp Service

4
Installing the Agilent A/D ChemStation

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This section explains how to configure your PC and install the new Agilent A/D ChemStation software. It also explains how to add or change modules and licenses, upgrade existing Agilent ChemStation software versions, activate the XML-based interface, install the Control Charts Reports, and uninstall the Agilent A/D ChemStation from your PC.

Configuring Your PC

NOTE Your PC must meet the minimum PC requirements specified in Chapter 1 before running the Agilent ChemStation B.01.xx setup program.

NOTE Keep your PC disconnected from the Internet during the installation phase. It is recommended that you install the latest security fixes, as supported by Agilent, and virus definitions before connecting to any network.

Configure your PC as follows before installing your Agilent ChemStation software.

1. Install the Windows 2000 Professional or Windows XP Professional operating system and the required patches and/or service packs on the PC (see "PC Requirements" on page 10 for more information).
2. Logon as a Windows administrator, as changes will be made to the CHEMSTATION.INI file and the Windows registry.
3. Set the Regional (and Language) Options in the Control Panel of your System to English (US). If you use another language, the following settings are mandatory:
   - Decimal symbol = . (point)
   - Digit grouping symbol = , (comma)
   - List separator = , (comma)
4. Check that you have at least 600 MB of free space on your hard disk to run the installation.

For more details, please follow the instructions outlined in the *Windows XP Professional Configuration* document, which is available as a PDF file on the Agilent ChemStation CD-ROM. This document describes required system settings for the best Agilent ChemStation performance.

Installing the Agilent A/D ChemStation Software

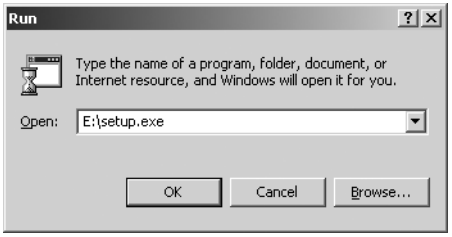
To install your Agilent A/D ChemStation software for the first time, follow the instructions below (see page 38 or page 47 for details on upgrading your software).

1 Ensure that no open programs are running on your system and all PC requirements steps have been met (see page 10).

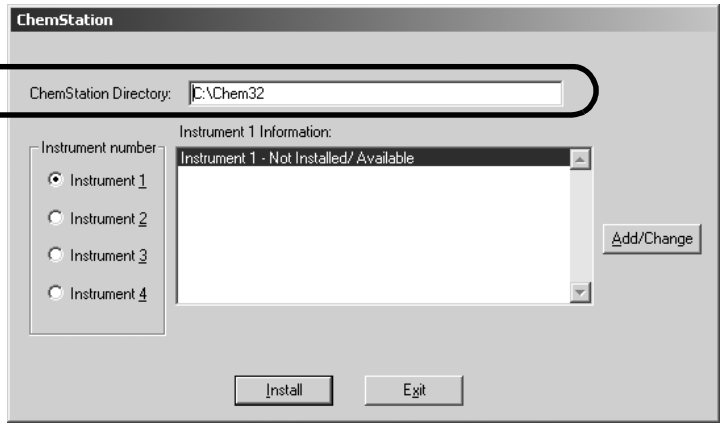
2 Insert the Agilent ChemStation CD-ROM into the CD-ROM drive.

3 From the Start menu in the Task Bar, go to Start> and select **Run**.

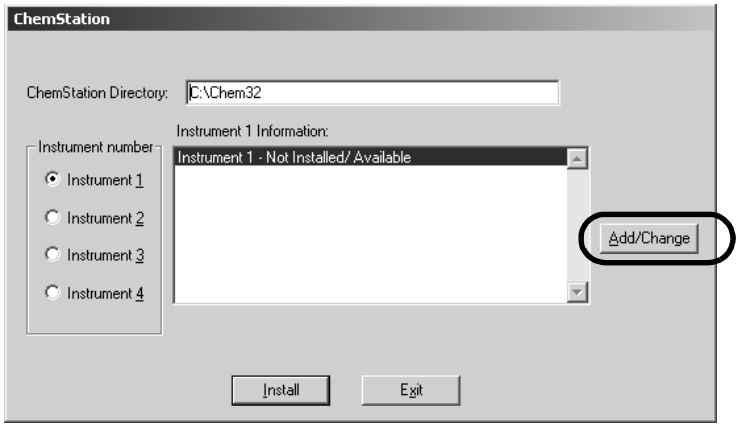
4 At the command line, type *drive*:\Setup.exe (for example, E:\Setup.exe), then click **OK**.



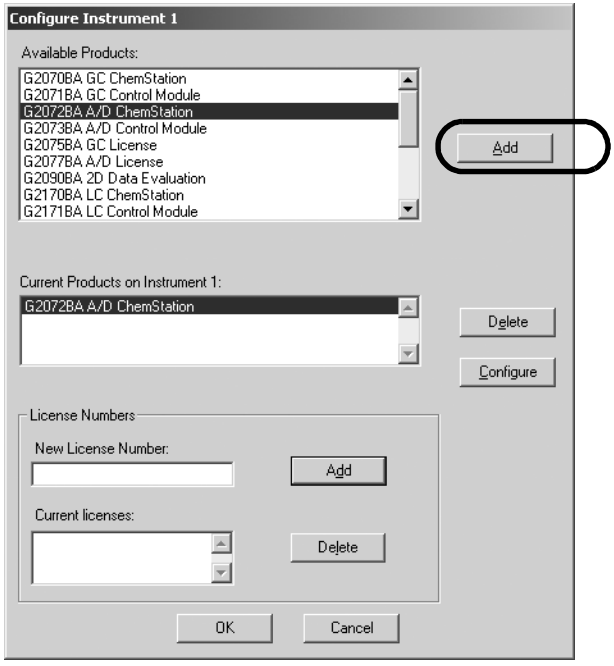
5 The following screen allows you to change the Agilent ChemStation installation directory on your hard drive. We recommend using the default directory C:\Chem32.



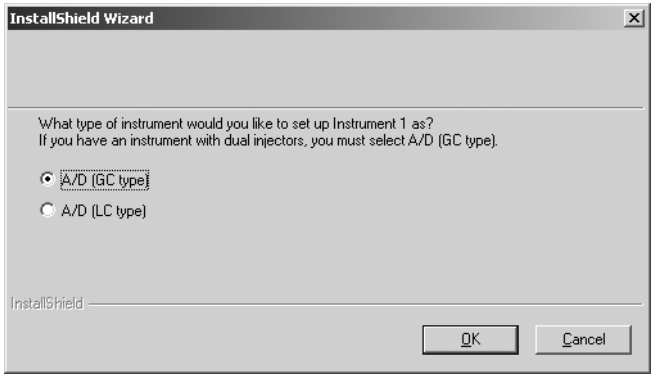
6 Select the Instrument Number you wish to configure, and click **Add/Change**.



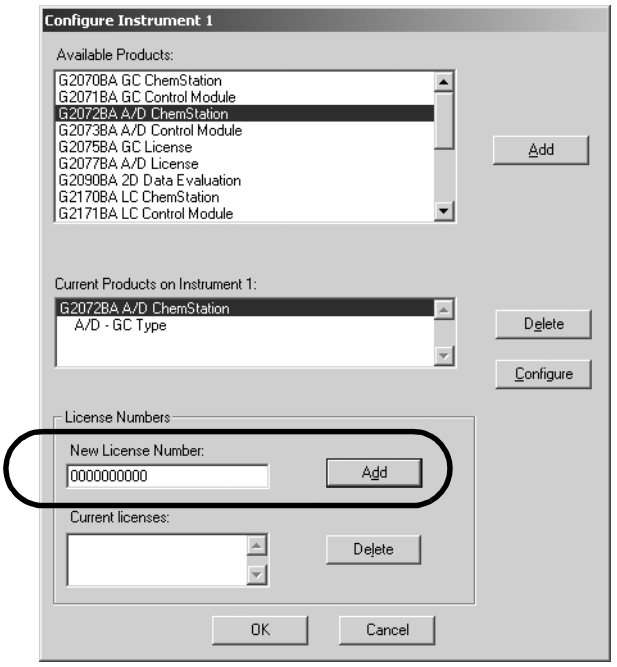
7 The Configure Instrument # screen displays. Scroll through the list of available products. Select **G2072BA A/D ChemStation** and click **Add**.



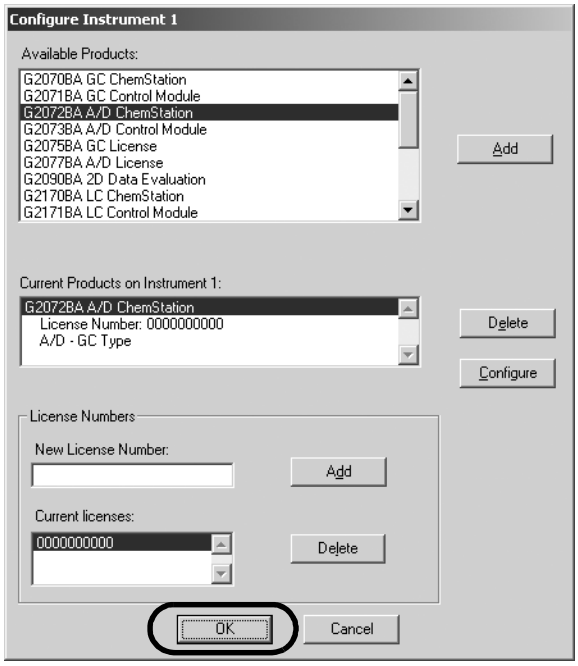
8 Make sure **A/D (GC type)** is selected, and click **OK.**


InstallShield Wizard
What type of instrument would you like to set up Instrument 1 as?
If you have an instrument with dual injectors, you must select A/D (GC type).
A/D (GC type)
A/D (LC type)
InstallShield
OK
Cancel

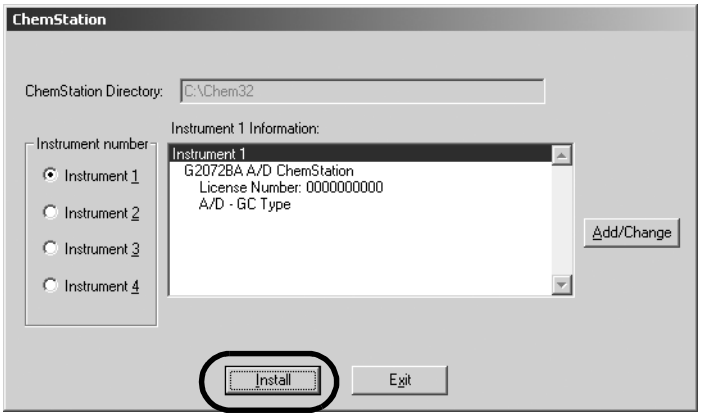
9 Enter the G2072BA A/D ChemStation license number and click **Add**.



10 To confirm selection of the Agilent ChemStation product, click **OK** at the bottom of the Configure Instrument # screen.



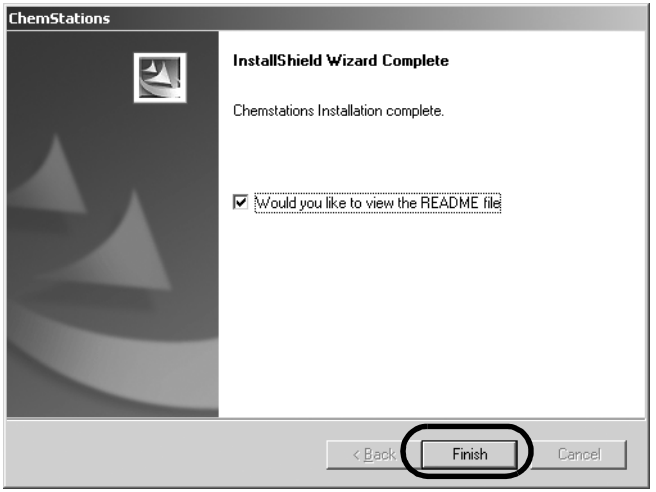
11 The Agilent ChemStation dialog box displays.



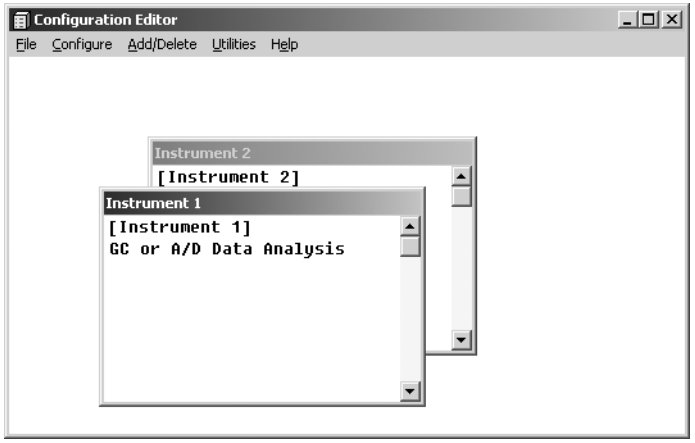
You have two options:

- **If you want to set up another instrument module or license for installation**, repeat steps 6 through 11.
- **If you want to begin the installation process**, click **Install**.

12 Once the Setup program has finished installing your software, you have the option to view the README file. Make sure the option is selected, and click **Finish**.

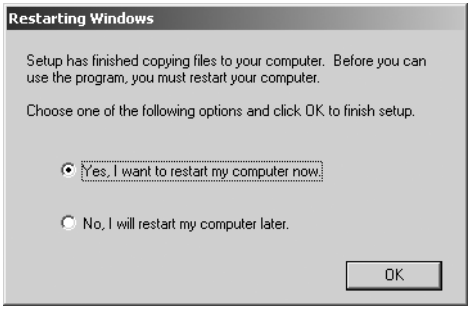


13 The Setup program automatically opens the Configuration Editor.



At this time, please refer to Chapter 5, "Configuring the 35900E Interface," for procedures on configuring your 35900E A/D converter instrument(s).

14 You must restart your computer to complete the software installation. Select **Yes, I want to restart my computer now**, and click **OK**. Your computer will close any open programs and restart.


Restarting Windows
Setup has finished copying files to your computer. Before you can use the program, you must restart your computer.
Choose one of the following options and click OK to finish setup.
Yes, I want to restart my computer now.
No, I will restart my computer later.
OK

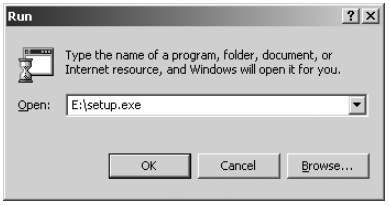
Store your CD-ROM and any license numbers in a safe place. These will be required if you wish to reinstall your software or add a new instrument module or license.

Upgrading/Updating B.01.xx or Adding Additional Instrument Modules

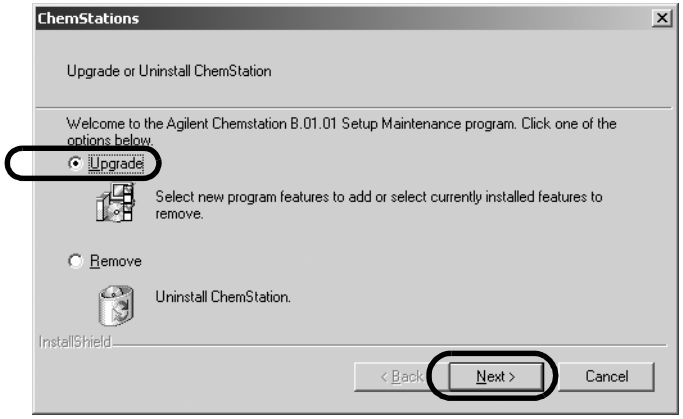
This section explains how to upgrade your existing B.01.xx Agilent ChemStation or add additional instrument modules.

Once you have installed the Agilent ChemStation, you may add or change instrument control modules, as described in the following procedure:

1. Start Windows.
2. Insert the Agilent ChemStation CD-ROM into the CD-ROM drive.
3. From the Start menu in the Task Bar, go to Start> and select **Run**.
4. At the command line, type *drive*:\Setup (for example, D:\Setup), then click **OK**.

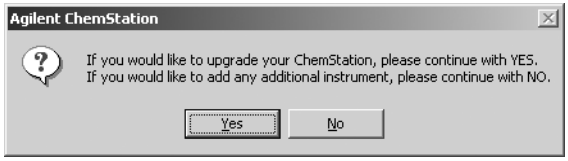


5 After a few seconds the setup program will display the following screen:


ChemStations
Upgrade or Uninstall ChemStation
Welcome to the Agilent Chemstation B.01.01 Setup Maintenance program. Click one of the options below.
Upgrade
Select new program features to add or select currently installed features to remove.
Remove
Uninstall ChemStation.
InstallShield
< Back
Next >
Cancel

- **To update or add additional instrument modules,** select **Upgrade**, and click **Next**. Go to step 8.
- **To completely remove the Agilent ChemStation software from your PC**, select **Remove** and follow the procedure "Uninstalling the Agilent ChemStation" on page 52.

6 If you chose to upgrade the software, the following screen will appear:


Agilent ChemStation
If you would like to upgrade your ChemStation, please continue with YES.
If you would like to add any additional instrument, please continue with NO.
Yes
No

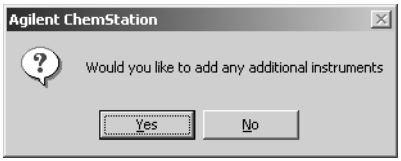
- If you would like to upgrade/update your existing B.01.xx Agilent ChemStation installation, click **Yes** and move on to step 7.
- If you want to add additional instrument modules, click **No**, and skip to step 9.

7 If you clicked Yes to upgrade/update the existing B.01.xx Agilent ChemStation installation, Setup will analyze the current installation and fix any file inconsistencies that may be present.

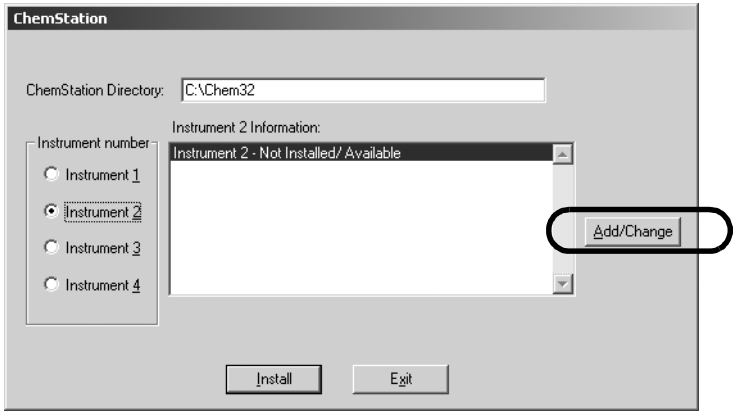
8 After a few minutes, the Setup program prompts you to add additional instruments:

- **To finish the upgrade/update and exit the Setup program,** click **No**, and skip to step 15.

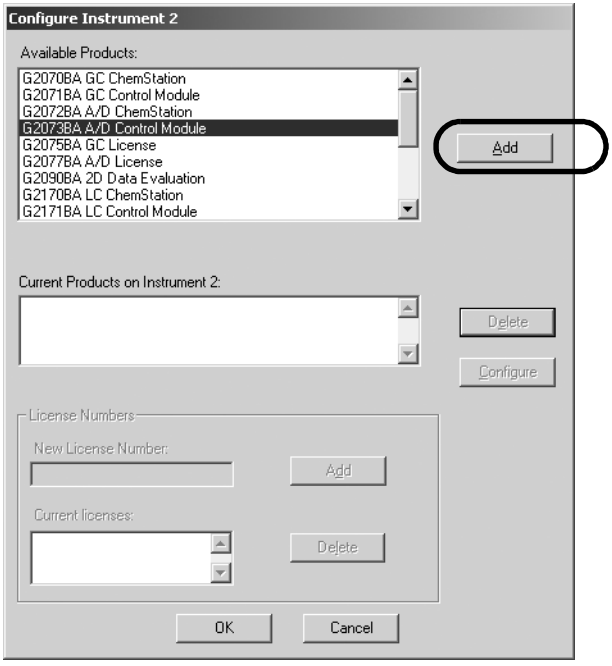
- **To add or change an instrument module,** click **Yes**.



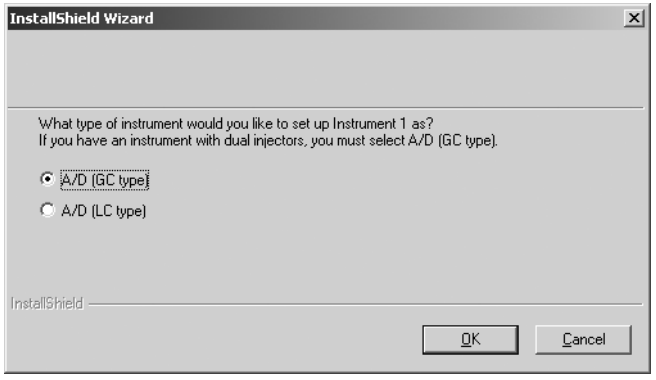
9 Select the instrument number for the instrument module you want to add or change, and click **Add/Change**.



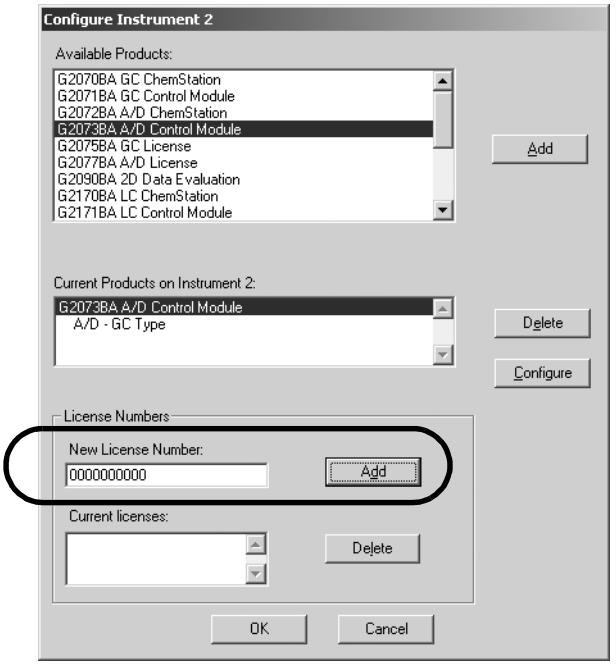
10 The Configure Instrument # screen displays. Scroll through the list of available products, select the product you wish to install, and click **Add**.



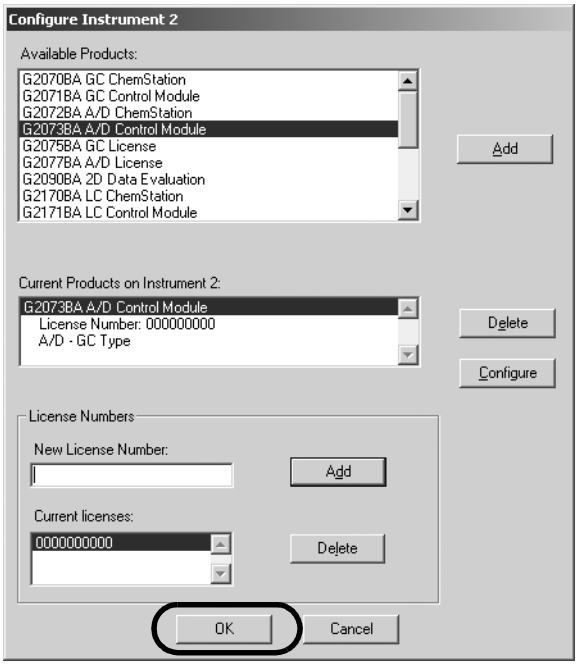
11 Make sure that **A/D (GC type)** is selected, and click **OK**.


InstallShield Wizard
What type of instrument would you like to set up Instrument 1 as?
If you have an instrument with dual injectors, you must select A/D (GC type).
A/D (GC type)
A/D (LC type)
InstallShield
OK
Cancel

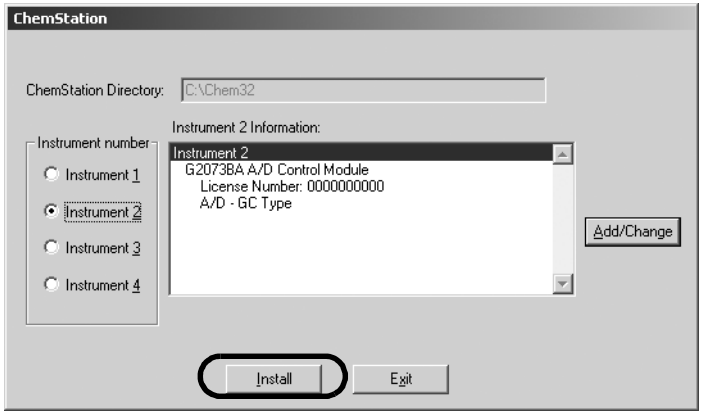
12 Enter the supplied license number for the product and click **Add**.



13 To confirm selection of the Agilent ChemStation product, click **OK** at the bottom of the Configure Instrument # screen.



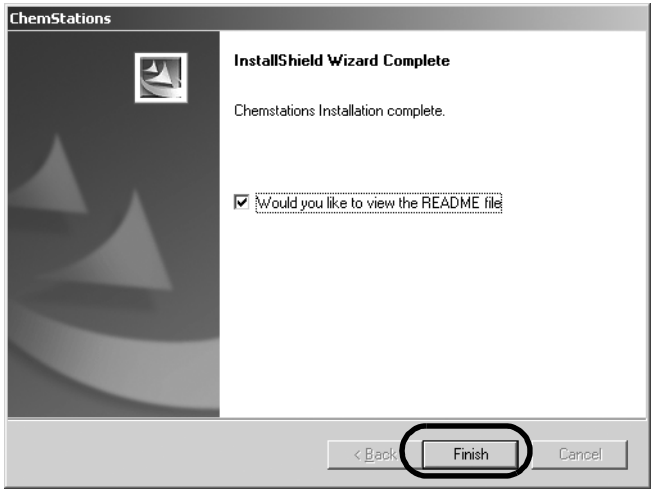
14 The ChemStation dialog box screen appears.



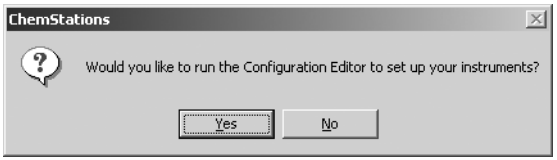
You have two options:

- **If you want to set up another instrument module or license for installation**, repeat steps 9 through 14.
- **If you want to begin the installation process**, click **Install.**

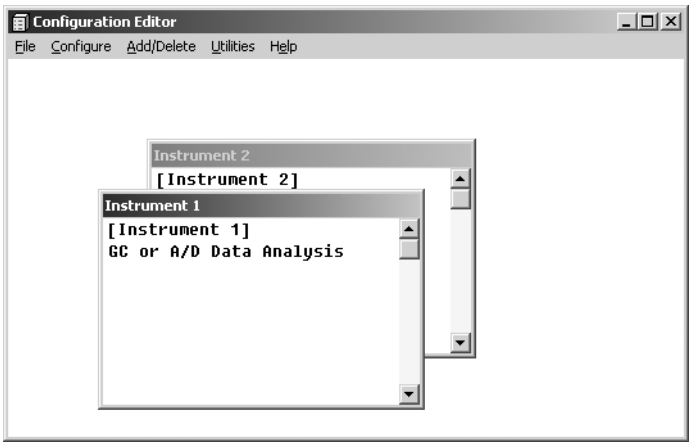
15 You now have the option to view the README file. Make sure the option is selected, and click **Finish**.



16 If you would like to run the Configuration Editor to set up your new instrument(s), click **Yes**. If **No**, skip to step 18.

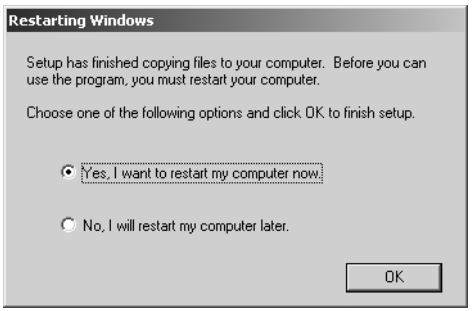


17 The Configuration Editor utility opens.



At this time, please refer to Chapter 5, “Configuring the 35900E,” for procedures on configuring your instrument(s).

18 You must restart your computer to complete the installation process. Select **Yes, I want to restart my computer now**, and click **OK**. Your computer will close any open programs and restart.


Restarting Windows
Setup has finished copying files to your computer. Before you can use the program, you must restart your computer.
Choose one of the following options and click OK to finish setup.
Yes, I want to restart my computer now.
No, I will restart my computer later.
OK

Store your CD-ROM and any license numbers in a safe place. These will be required if you wish to reinstall your software or add a new instrument module or license.

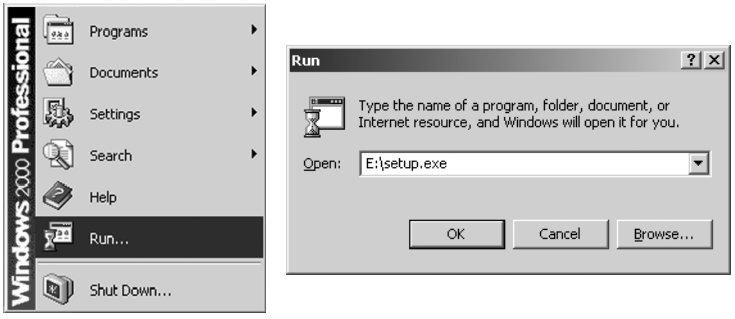
Upgrading from Agilent ChemStation Rev. A.09.03 and A.10.xx to Agilent ChemStation B.01.xx

Upgrading Agilent A/D ChemStation software may require hardware or operating system changes that must be completed before starting the following upgrade procedure.

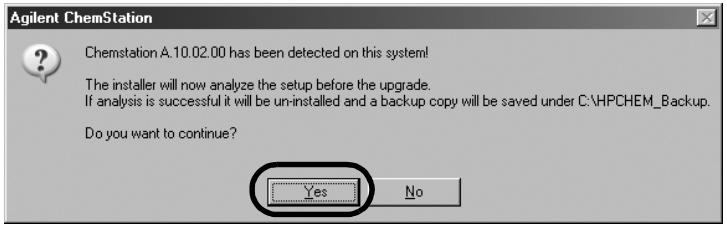
Please read the document entitled *Upgrade Preparation Guide for Agilent ChemStation B.01.xx* for detailed instructions on how to prepare for upgrading. The documentation is available as a printed document and also as a PDF file found in the manual directory of the Agilent ChemStation CD-ROM.

You may upgrade your system from A.09.03 through A.10.xx to B.01.xx as follows:

1. Close all open programs and restart your computer (do not start the Agilent ChemStation).
2. Insert the Agilent ChemStation CD-ROM into the CD-ROM drive.
3. Backup/Record data as suggested by the document entitled *Upgrade Preparation Guide for Agilent ChemStation B.01.xx.*
4. From the Start menu in the Task Bar, go to Start> and select **Run**.
5. At the command line, type *drive*`:\Setup.exe` (for example, `E:\Setup.exe`), then click **OK**.



6 If you are upgrading from Agilent ChemStation version A.09.03 or higher, the following dialogue box will appear. Click **Yes** to proceed with the upgrade installation.


Agilent ChemStation
Chemstation A.10.02.00 has been detected on this system!
The installer will now analyze the setup before the upgrade.
If analysis is successful it will be un-installed and a backup copy will be saved under C:\HPCHEM_Backup.
Do you want to continue?
Yes
No

7 During the upgrade procedure, setup checks to ensure all installed components are compatible with the new Agilent A/D ChemStation software. If any of the following configurations are detected, a warning message will appear and the upgrade process will be aborted:

- Any Agilent ChemStation add-on software installed on the PC.
- Agilent ChemStation version A.09.01 or earlier.

NOTE Any hardware/software incompatible with version B.01.xx must be uninstalled and physically removed prior to running setup.

8 If no incompatible configurations are detected, Setup will:

   a Move the previous ChemStation installation to C:\HPCHEM_Backup.

   b Backup the WIN.INI file to C:\WINNT\WIN.000, and create the file CHEMSTATION.INI in its place.

   c Install the new Agilent ChemStation to C:\HPCHEM.

9 When the software installation is complete, the following message appears:

Agilent ChemStation
Methods, data files and sequences from your old Chemstation installation can be used with your new Chemstation. Do you want to copy these files to the new installation?
Yes
No

   If you select **Yes**, all user-created methods, sequences, and data files are copied to the new Agilent ChemStation software installation directory.

10 Configuration Editor will appear. Please see Chapter 5 and update your A/D instruments as needed.

11 Restart your computer to complete the Agilent ChemStation upgrade.

Activating the XML-Based Interface

If you are using a LIMS or other external data collection systems, the Agilent ChemStation provides an XML interface to allow it to read sample input lists, analyze the samples, and then output result data back to the LIMS system. To enable this functionality, you will need to make changes to the CHEMSTATION.INI file. Please refer to the *XML and LIMS Interface Guide* found in the \manuals folder on the Agilent ChemStation CD-ROM for full details.

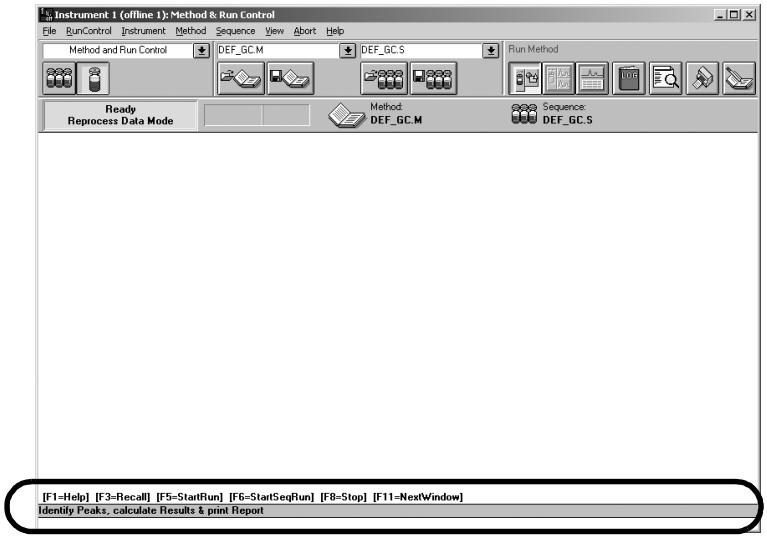
Installing the Control Charts Reports

In order to use this feature you must have Microsoft Excel 2000 installed.

After you have installed your Agilent ChemStation and rebooted your PC system, you are ready to install the ChemStation Control Charts feature.

1 Start the Agilent A/D ChemStation.

2 Find the Agilent ChemStation command line.



The command line is a text entry field across the bottom of the Agilent ChemStation program window.

3 At the command line, type `MACRO STARTCHT.MAC,GO`

4 Press **Enter**.

5 A dialog box providing information about the installation appears.

6 Select **Help** from this dialog box for information about using Control Charts with your Agilent ChemStation.

7 Select **OK** to install Control Chart feature to your Agilent ChemStation. This process adds Control Charts to your reports menu.

Uninstalling the Agilent ChemStation

In some cases you will need to uninstall the Agilent A/D ChemStation. When you uninstall the Agilent A/D ChemStation software, your data, methods, sequences, UV-libraries, customized report styles, and any macros are saved in a backup directory.

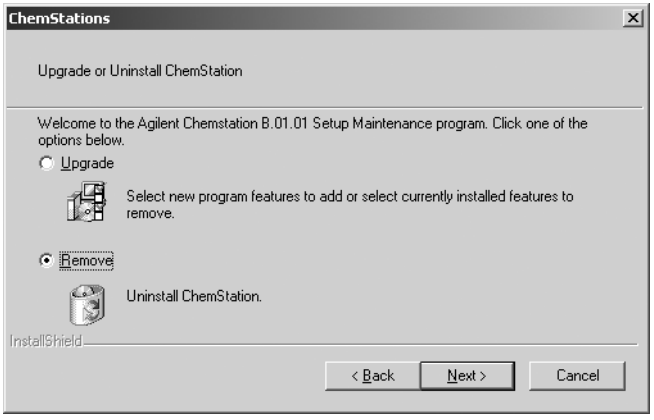
To uninstall the Agilent A/D ChemStation software:

1 Close all open software programs and reboot the computer.

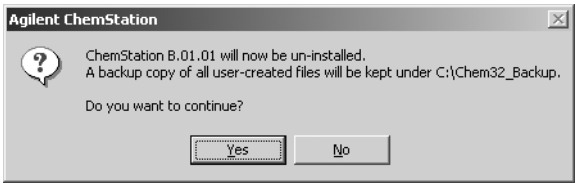
2 Remove Agilent ChemStation via the Control Panel:

- **For Windows 2000 Professional users**, go to Start>Settings>Control Panel> and select **Add/Remove Programs**. Scroll through the list, select **Agilent ChemStation B.01.xx**, and press **Change/Remove**.
- **For Windows XP Professional users**, go to Start>Control Panel> and select **Add or Remove Programs**. Scroll through the list, select **Agilent ChemStation B.01.xx**, and press **Change/Remove**.

3 A screen will appear called Upgrade or Uninstall ChemStation. Click the **Remove** radial button and then click **Next** to start the uninstallation process.


ChemStations
Upgrade or Uninstall ChemStation
Welcome to the Agilent Chemstation B.01.01 Setup Maintenance program. Click one of the options below.
Upgrade
Select new program features to add or select currently installed features to remove.
Remove
Uninstall ChemStation.
InstallShield
< Back
Next >
Cancel

4 Windows will ask you to verify the uninstallation procedure. Click **Yes** to continue.


Agilent ChemStation
ChemStation B.01.01 will now be un-installed.
A backup copy of all user-created files will be kept under C:\Chem32_Backup.
Do you want to continue?
Yes
No

5 The system will backup your Agilent ChemStation data, methods, sequences, UV-libraries, customized report styles, and any macros during the uninstall process.

The system creates a directory called C:*DefaultDirectory*_Backup where it stores the data. The original folder structure of the data will remain intact. For example:

- \CHEM32_Backup\1\
  \CHEM32_Backup\2\
  \CHEM32_Backup\3\
  \CHEM32_Backup\4\
  contains all data, methods, and sequences for instruments 1 to 4
- \CHEM32_Backup\REPSTYLE\
  contains customized report layouts
- \CHEM32_Backup\SPECLIBS\
  contains spectral libraries
- \CHEM32_Backup\CHEMSTOR\
  contains local ChemStore databases
- \CHEM32_Backup\CORE\
  contains custom macros

6 The complete CHEM32 folder is removed from the hard drive.

7 The Agilent ChemStation path statement is removed from the environment path variable within the Windows operating system environment.

8 Close out of Windows Control Panel.

9 Restart the computer.

10 The Agilent ChemStation uninstallation procedure is complete.

5 Configuring the 35900E Interface

Configuring the 35900E 56
Configuring the 35900E Interface with a Sampler 64

This chapter describes how to configure the 35900E analog-to-digital interface board with a personal computer and a sampler.

The 35900E is a dual-channel, run-buffered, standalone interface that converts analog signals from analytical instruments to digital data that can be used by the Agilent ChemStation systems.

The 35900E uses Modular Input/Output (MIO) for host communications. MIO is a standard designed to allow for maximum flexibility in peripheral-to-host communications. The MIO slot is on the rear panel of the 35900E. The LAN MIO board connects the 35900E to the Agilent ChemStation.

When using the 35900E, you can define up to 16 events in the Configuration Editor and then schedule occurrence of those events in the Agilent ChemStation's Timed Event Table dialog box.

Configuring the 35900E

Before operating the 35900E, use the Configuration Editor to define the 35900E instrument options, as described below.

1 Turn on all equipment connected to the Agilent ChemStation.

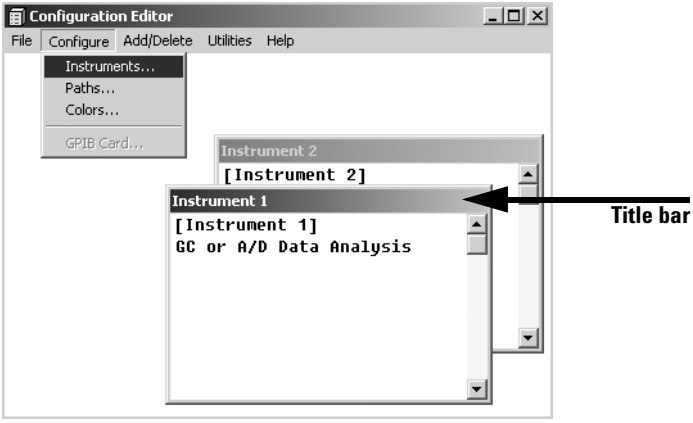
2 Access the Configuration Editor utility.

- **If you are using Windows 2000 Professional**, click the Start menu in the Task Bar and go to Start>Programs>Agilent ChemStation> and select **Configuration Editor**.
- **If you are using Windows XP Professional**, click the Start menu in the Task Bar and go to Start>All Programs>Agilent ChemStation> and select **Configuration Editor**.

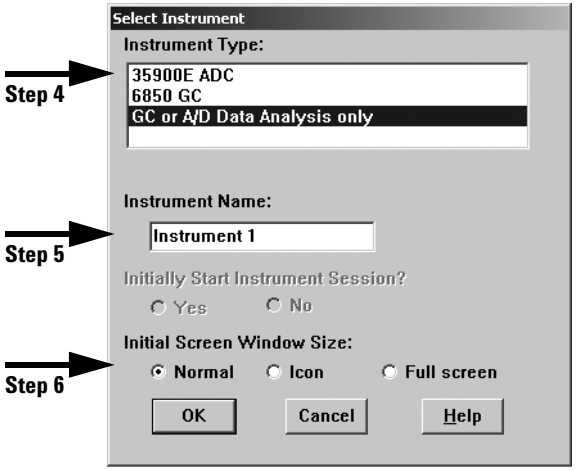
3 To access the Select Instrument screen:

a Highlight the title bar of the window associated with the instrument you want to configure (for example, instrument 1, 2, 3, or 4).

b Select **Configure>Instruments...** from the menu bar.



4 Select the **35900E ADC** instrument from the Instrument Type list.



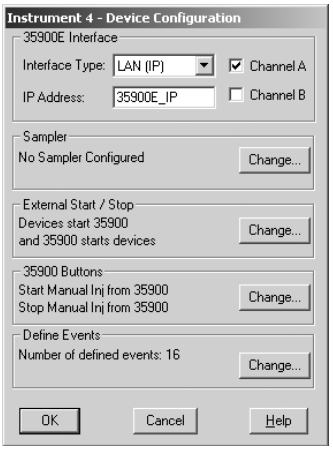
5 Accept the instrument name, or type a new one in the Instrument Name field. This field will appear in the title bar when using the Agilent A/D ChemStation.

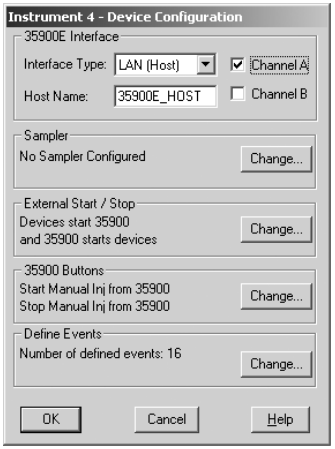
6 Select the Initial Screen Window Size.

- *Normal* fills most of the screen
- *Minimized* shows as an icon
- *Full screen* fills the entire screen.

7 To accept the settings and to display the Device Configuration dialog box, click **OK**.

8 Configure the 35900E Instrument's interface board.





- **For a LAN IP address**, select **LAN (IP)** as the Interface type and enter the IP address for the 35900E controlled by the Agilent ChemStation.
- **For a Host Name**, select **LAN (Host)** as the Interface type and enter the Host Name for the 35900E controlled by the Agilent ChemStation.

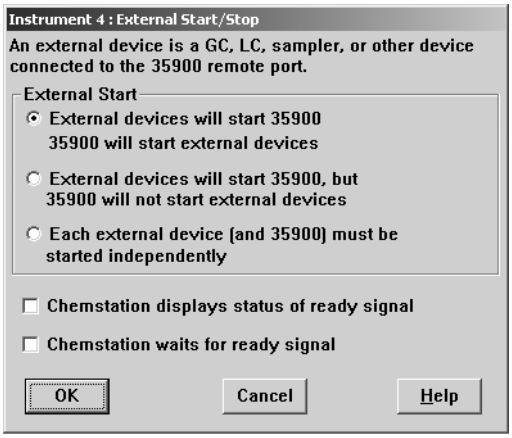
NOTE This requires installing the Agilent Bootp Service. See Chapter 3, "Installing Agilent Bootp Service."

For assistance in assigning an IP number or Host Name to your 35900E, see Chapter 2 and Chapter 3, or the online help system accompanying the Agilent Bootp Service.

9 Select the appropriate channel(s) to be used. The above example shows a one channel (A) configuration. If you are unsure as to how many channels to configure, refer to the *35900E Users Manual* for more information.

10 Check the sampler configuration. To change the sampler in the Sampler group box configuration, click **Change**. See the section "Configuring the 35900E Interface with a Sampler" on page 64 for detailed instructions on how to configure with a sampler.

11 Define the External Start/Stop and Ready Status options. To access the dialog box, click **Change**. This dialog box contains the start/stop and the ready status options for the 35900.


Instrument 4 : External Start/Stop
An external device is a GC, LC, sampler, or other device connected to the 35900 remote port.
External Start
External devices will start 35900
35900 will start external devices
External devices will start 35900, but
35900 will not start external devices
Each external device (and 35900) must be started independently
Chemstation displays status of ready signal
Chemstation waits for ready signal
OK
Cancel
Help

a Select an applicable option from the available three start/stop options.

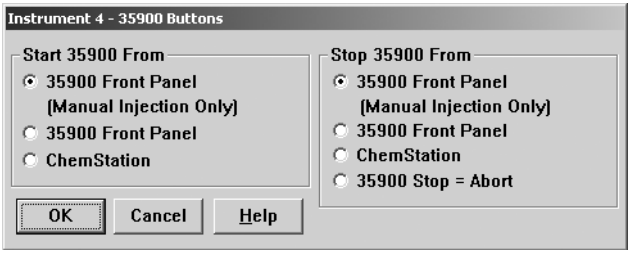
b Select the appropriate ready status options.

Select the **ChemStation displays status of ready signal** box to have the Agilent ChemStation display a run status signal on the screen when the instrument is ready.

Select the **ChemStation waits for ready signal** box to have the Agilent ChemStation wait for a ready signal from the instrument before proceeding with any automatic processes.

c To return to the Device Configuration dialog box, click **OK**.

12 Configure the 35900 Buttons. To access the 35900 Buttons dialog box in the 35900 Buttons group box, click **Change**.



13 The 35900 Buttons dialog box options determine whether or not the front panel buttons on the 35900 interface can start or stop a manual run.

a Select the appropriate start/stop button options for the 35900.

b To return to the Device Configuration dialog box, click **OK**.

14 Check the timed events. To define timed events for the 35900E in the Define Events group box, click **Change**.

- If you are using the 35900E in the Remote Bus mode (the default setting), skip this section. It does not apply to your configuration.
- If you are using the 35900E in the programmable digital I/O mode, you will be able to schedule 16 timed events in the Agilent ChemStation. First, however, you must enter the EXPRESSION you want to use to define each event, as described below.
- Each expression will define the “energized” state (for example, open) and “de-energized” state (for example, closed) of each instrument you will be controlling with the 35900E. Later you may schedule these events using the expressions you enter here in the Agilent ChemStation's Timed Events Table dialog box.

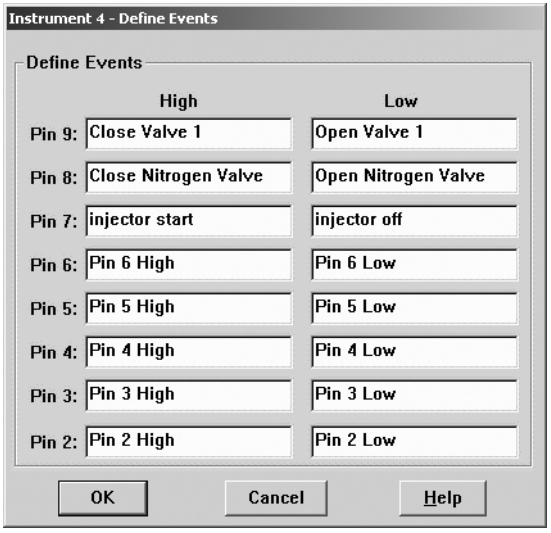


Figure 1 Define Events screen example

Please note that Figure 1 shows pins 7 through 9 as user-defined and pins 2 through 6 as default settings.

CAUTION

The correlation between the expression you assign and the pin number/state with which it is associated is saved with the instrument's definition file. The Method only stores and uses the EXPRESSION itself (for example, Close Valve 1). As a result, if you copy a Method from one Agilent ChemStation to another Agilent ChemStation, and the second Agilent ChemStation has a matching event EXPRESSION, but different instruments, unpredictable results could occur.

Therefore, think of the associations you establish between an instrument and an event EXPRESSION as unique to your specific hardware configuration.

a Enter the EXPRESSION you want to use to define the first instrument's de-energized state (HIGH) and energized state (LOW). You may use any combination of characters and numerals (maximum of 20).

For example, if you are going to control a normally closed valve (a valve that opens only when energy is applied), you could assign an expression like the one shown in Figure 1 on page 61. This expression indicates that the valve is normally closed (The HIGH state is closed) and when energy is applied it goes to the opened state (The LOW state is opened).

You could also assign a more explicit expression, such as **Close Nitrogen Valve** and **Open Nitrogen Valve** if you prefer.

b Repeat the process described in step (a) for each additional instrument you are going to control.

c To return to the Device Configuration dialog box, click **OK**.

15 Verify the configuration. Check that the information displayed in the Device Configuration dialog box is correct.

To change any of these selections, click **Change** in the appropriate group box.

16 Exit the Device Configuration dialog box. To return to the Configuration Editor main screen, click **OK**.

17 Save the new instrument configuration. Select **File/Save**. Wait while the newly configured instrument is stored.

18 If you are going to configure more than this instrument, select another instrument and continue. If this is your only instrument, select **File/Exit**.

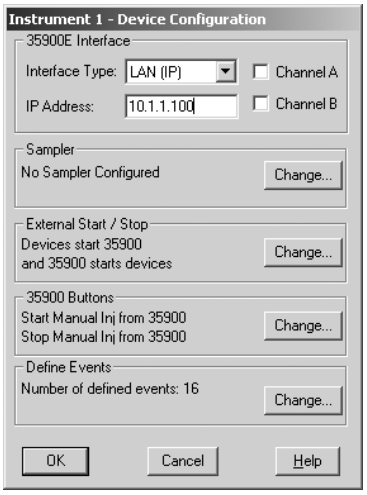
19 If you configured your instrument(s) during the installation process, you must restart your computer to complete the software installation. Select **Yes, I want to restart my computer now**, and click **OK**. Your computer will close any open programs and restart.

20 Store your CD-ROM and any license numbers in a safe place. These will be required if you wish to reinstall your software or add a new instrument module or license.

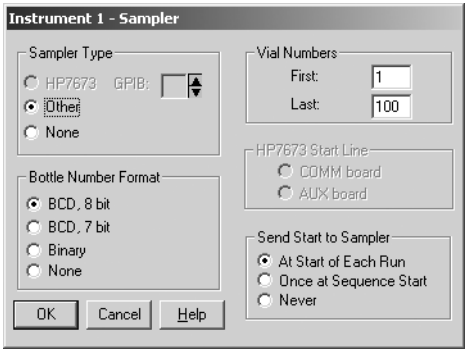
Configuring the 35900E Interface with a Sampler

To configure the 35900E with a sampler, complete the steps described below.

1 Access the Device Configuration dialog box. See "Configuring the 35900E" on page 56 for instructions on how to access this dialog box.



2 Check the sampler configuration. To access the 35900E Sampler dialog box in the Sampler group box, click **Change**.



Select **Other** and make the appropriate choices for the other boxes.

3 Verify the sampler configuration. If the information in the Sampler dialog box is correct, click **OK** to return to the Device Configuration dialog box.

   If you want to change any of these selections, make new selection(s) in the appropriate group box(es).

4 Exit the Device Configuration dialog box. To return to the Configuration Editor main screen, click **OK**.

5 Save the new instrument configuration. Select **File/Save**. Wait while the newly configured instrument is stored.

6 If you are going to configure more than this instrument, select another instrument and continue. If this is your only instrument, select **File/Exit** to exit the Configuration Editor.

7 If you configured your instrument(s) during the installation process, you must restart your computer to complete the software installation. Select **Yes, I want to restart my computer now**, and click **OK**. Your computer will close any open programs and restart.

8 Store your CD-ROM and any license numbers in a safe place. These will be required if you wish to reinstall your software or add a new instrument module or license.

6 Validating and Starting the Agilent A/D ChemStation

Agilent ChemStation Installation Verification 68
Starting the Agilent ChemStation 73

This section explains how to use the Agilent ChemStation Installation Qualification utility to validate the proper installation of the Agilent A/D ChemStation on your personal computer. It also explains how to begin using the Agilent ChemStation once the installation has been validated.

Agilent ChemStation Installation Verification

After installing the Agilent ChemStation system software on your computer and configuring the analytical system, your internal validation procedure may require you to assess the correctness and completeness of the installation, and to verify that the analytical system is fully operational.

The Agilent ChemStation Installation Qualification utility uses factory delivered installation reference files to verify the existence, correctness, and integrity of the required Agilent ChemStation system files (executable program files, binary register files, macro files, initialization files, help files, and customized report templates). This process is called Installation Qualification (IQ).

File integrity is completed by comparing the 32-bit cross-redundancy-check (CRC) checksum of the installed file with the checksum of the original file recorded on Agilent Technologies' installation master. The file details of the installation master are delivered on so-called reference files. Modified or corrupted files have different checksums and are thus detected by the IQ Utility.

The integrity of the reference files themselves is also tracked with the help of checksums. If the IQ utility is supplied with a reference file that was modified after its generation, this will be flagged in the report (section *invalid reference files*).

In addition, the IQ utility checks version codes of the Agilent ChemStation executable system files (*.EXE, *.DLL).

Starting the IQ Utility

The Agilent ChemStation Installation Qualification Utility is automatically installed with the appropriate IQ reference files.

IQ Utility execution

NOTE Make sure that any Agilent ChemStation software is closed before running the IQ Utility.

The Agilent ChemStation Installation Qualification is automatically installed and the appropriate IQ reference files are copied to your PC's hard disk. The appropriate Agilent ChemStation IQ icons are added to your Agilent ChemStation program group.

Checksum calculations for all Agilent ChemStation system files may take several minutes. A dialog box indicates the name of the system currently being analyzed.

IQ Utility results

The Agilent ChemStation IQ Utility displays the qualification results on the screen and can optionally generate a report of its findings.

On a complete and consistent installation, the installation qualification completes without any error messages and no files are reported missing or modified.

If the qualification report lists files as missing or modified, the IQ utility displays the error message **Installation Qualification completed with error(s)** in the message line.

The Agilent ChemStation Verification reports the following file categories:

File categories reported by Agilent ChemStation Installation Verification

File category	Explanation	Required action
Identical files	Required files exist and passed the version and integrity check.	No action required.
Missing files	Files that are required to run the Agilent ChemStation are missing.	Reinstall the Agilent ChemStation.
Modified files	Files have been corrupted or modified.	Reinstall unless you have intentionally customized or updated Agilent ChemStation files, then generate a new installation qualification reference file for customized or updated Agilent ChemStation installations.
Invalid reference file	The original reference file is corrupt or has been modified after creation.	Reinstall the original reference file.

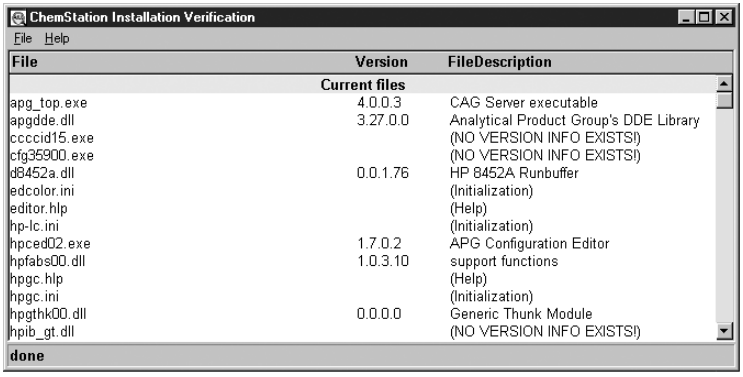


Figure 2 Example for System Modifications Detected by Installation Verification

The printed report contains the license registration numbers used on the system that was checked. It also lists the reference files (name and date code) that were used for the installation verification.

Example report:

ChemStation
Installation Verification

Verification result
Installation verification completed successfully.
All ChemStation files retrieved with the correct version.

Installed licenses
...

Root directory
c:\chem32

Reference files
...

Invalid reference files
...

Ambiguous references
None

Generating a verification reference file on a customized installation

The Agilent ChemStation has an open architecture that allows knowledgeable users to add their own customizing code. In regulated environments, such adaptations, additions, or modifications are generally documented. For your own tracking purposes, you can use the Agilent ChemStation IQ utility to generate a reference file listing for the customized system. You can use this reference file to qualify the completeness and integrity of the customized Agilent ChemStation and use it as a tracking document for future modifications. The program scans for files with the extensions *.dlc, *.dll, *.drv, *.enu, *.exe, *.hlp, *.ini, *.mac, *.mcx.

For example, in order to create the file contents list along with the corresponding file checksums for your existing installation:

- Check your install of GC before running this reference file.
- Under Windows, click **Run.**
- Execute the IQ utility with the following command line options:

```
C:\CHEM32\SYS\HPVERI00.EXE -f custom.ref
```

- Add the resulting reference file to your project documentation. To automatically run an IQ test using the new reference file, set up an icon with the following command line specification in its properties:

```
C:\CHEM32\SYS\HPVERI00.EXE -r custom.ref
```

For a complete description of the command line syntax of the IQ utility, refer to its help file (C:\CHEM32\SYS\HPVERI.HLP).

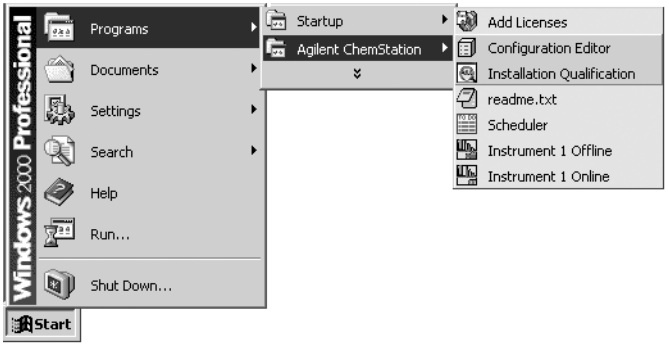
See the Installation Verification help system for a complete description of the IQ utility's command line options. The IQ does not check method files, sequence files, or data files. These files are stored in Agilent Technologies proprietary, unalterable binary formats and are checked for integrity when loaded into the Agilent ChemStation.

Starting the Agilent ChemStation

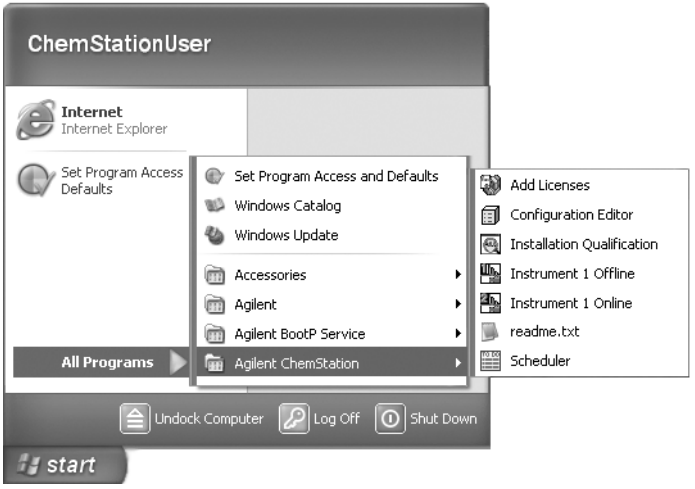
After installing the Agilent A/D ChemStation software and rebooting your system, you may start an online session.

1 From the Start menu in the Task Bar:

- **For Windows 2000 Professional users**, select Start>Programs>Agilent ChemStation> and select the appropriate instrument.



- **For Windows XP Professional users**, select Start>All Programs>Agilent ChemStation> and select the appropriate instrument.



2 After a few seconds, Agilent A/D ChemStation completes the startup process and is ready for first use.

3 Refer to the “Agilent ChemStation Help System” on page 96 for information on how to use the software.

7 Troubleshooting

Troubleshooting LAN Communication 76
Software Start-Up Problems 78
Printing Problems 82
Computer Problems 86

This section contains selected error messages that may appear in your Agilent A/D ChemStation software and provides possible causes and solutions.

Troubleshooting LAN Communication

Power failure reported on the Agilent ChemStation

Cause Your Agilent ChemStation cannot connect to the analytical instrument configured using a LAN communication.

Solution Verify that the IP address is correct. Check the IP address and subnet mask of the Agilent GC system by using the control module, if available.

Verify that basic communication is possible

Cause The instrument is not communicating with the software.

Solution Use the ping command to verify that the IP address is operational.

1. Open a command prompt window on your PC.
2. Type `ping 10.1.1.102` and press **Enter**; where 10.1.1.102 can be replaced by the appropriate IP address or by the selected host name.
3. The ping command will send a request for reply to the IP address, bypassing part of the Windows TCP/IP settings. A successful ping would look like

   Reply from 10.1.1.102: bytes=32 time<10ms TTL=128

   If **request timed out** is displayed, the IP address can not be reached by the ping command.
4. If the ping request was answered successfully by the instrument, you need to verify that your Windows TCP/IP settings are correct for the selected network, especially the subnet mask and gateway settings should be checked.

Identify by host name

Cause If you identify the Agilent GC system by host name, ensure that the used host name and IP address are correctly setup in the DNS server or the corresponding entry in the HOSTS file exists.

Solution See Chapter 3, “Installing Agilent Bootp Service,” starting on page 19. Try using the IP address in the Configuration Editor.

Frequent Buffer Overrun in Instrument Log Book

Cause The network is not capable of the network traffic induced by the data acquisition of the instruments.

Solution Please contact your system administrator.

This can also be caused by an incorrectly configured LAN card. See Chapter 2, “Installing Local Area Network (LAN) Communications,” starting on page 13.

Software Start-Up Problems

This section lists selected error messages that may appear during the Agilent ChemStation start-up.

An online core must be purchased in order to install additional instrument modules

Cause Most probably, a previous version of the Agilent ChemStation was installed on the PC, but the CHEM32 directory subtree was deleted before starting setup. CHEMSTATION.INI still contains references to the deleted Agilent ChemStation installation in the [PCS] and [PCS,...] sections.

Solution Delete the [PCS] sections in CHEMSTATION.INI.

ChemStation cannot be located on your system. You must first install Agilent ChemStation before installing an instrument

Solution Before installing an add-on instrument control module, you need to install the Agilent A/D ChemStation core (G2072BA).

No valid license...

Cause The Agilent A/D ChemStation does not initialize an instrument module unless a valid license registration number has been entered.

Solution Start the license registration utility from the Agilent ChemStation group in Windows Program Manager. The license registration utility prompts you for the appropriate license registration numbers.

System Status shows Not Ready

Cause The cause for being in a not-ready state is detected by the instrument.

Solution Not-ready conditions of the Agilent instruments are described in the documentation accompanying the respective instrument.

Cannot find HPNLS01.DLL

Cause Windows needs this file to run.

C:\CHEM32\CORE\HPCORE.EXE

The Agilent ChemStation does not start. You receive error messages that indicate that the Agilent ChemStation initialization could not access specific libraries. You can close all of the error message boxes.

Solution Verify that the Agilent ChemStation main directories (default: C:\CHEM32 and C:\CHEM32\SYS) are included in the PATH setting of the Environment Path variable of the operating system by typing `PATH` at the MS-DOS prompt. If the Agilent ChemStation system directories are listed in the PATH setting, simply close all applications and restart the computer.

If the directories are not part of the PATH setting, open **C:\AUTOEXEC.BAT**, find the last entry that specifies SET PATH, and append `C:\CHEM32;C:\CHEM32\SYS` to the line.

...key in section [PCS...] of CHEMSTATION.INI not valid or specified file does not exist

Cause File Initialization failed.

The Agilent ChemStation reports an error during the initialization of its file structure.

Solution Verify that the Agilent ChemStation data, method and sequence path settings all point to existing directories on your PC's hard disk. You can view these settings in the configuration editor.

Go to the [PCS...] section in CHEMSTATION.INI that was specified in the error message (for example, [PCS,1] and check the contents of the key entry.

If the mismatch is in the _Exe(cution)$ key, check whether the _EXEPATH$ key contains the correct path specification for the Agilent ChemStation core modules (default: C:\CHEM32\CORE\).

If the _Meth(od)File$ key is reported to be inconsistent, verify that your instrument method directory (for example, C:\CHEM32\1\METHOD) contains a method directory called def_gc.m.

If the _Seq(uence)File$ key is reported to be inconsistent, verify that your instrument sequence directory (for example, C:\CHEM32\1\SEQUENCE) contains a sequence file called def_gc.s.

If one or both of them do not exist, either restore a backup copy, copy the corresponding files and directories from another Agilent ChemStation instrument, or reinstall the software.

System Exception in dialogs.c

Cause The Agilent ChemStation was terminated abnormally and does not restart. This is usually caused by specific libraries of the application still being active in the PC's memory.

Solution Close down all applications and restart Windows.

Configuration Editor no longer runs

Cause If changes are made to the Windows CHEMSTATION.INI configuration file manually, or CHEMSTATION.INI becomes corrupted, it is possible that syntax errors or inconsistencies are introduced into the Agilent ChemStation sections of this file which cause the Configuration Editor to fail.

Solution The best solution to this problem is to restore a backup copy of the CHEMSTATION.INI file which does not have the errors. If a backup is not available, the configuration sections can be removed manually and the configuration restored using the Configuration Editor. To do this, edit the CHEMSTATION.INI file using the NOTEPAD editor and remove the sections that are preceded by [PCS,1], [PCS,2], [PCS,3] and [PCS,4], including the section titles. Then, edit the lines for devices and instruments in the main [PCS] section to read:

devices=
instruments=

Remove all of the other device statements. At this point, you should be able to run the Configuration Editor. Add the instruments back to the configuration and reconfigure the instrument devices.

If the configuration information is still inconsistent and the configuration editor does not open, we recommend that you remove the [PCS] section from CHEMSTATION.INI and re-install the software.

Autostart Macro failed

Cause During the initialization, the Agilent ChemStation automatically loads and executes macro code from a defined set of macro files. A run time error caused the autostart macro to fail.

A text error message is displayed in the (red) message line of the Agilent ChemStation.

Solution If you have added your own customization macro code to User.Mac in the Agilent ChemStation core directory (default path: C:\CHEM32\CORE), check that all the macros loaded in this macro file are correctly specified.

If you cannot identify or isolate the problem, rename User.Mac to Usr.Mac and restart the Agilent ChemStation. If the error message does not occur, you need to debug your customization code.

If the error persists, the working copy of the Agilent ChemStation's configuration register may have been corrupted. Rename or delete the configuration register in the appropriate instrument directory:

- The configuration register for instrument 1 online is C:\CHEM32\1\CONFIG.REG, or
- The configuration register for instrument 1 off-line is C:\CHEM32\1\CONF_OFF.REG.

Alternatively, one of the Agilent ChemStation's macro files may have been modified or corrupted. In this case, you need to reinstall the Agilent ChemStation software.

General Protection Fault in Module...

Cause The operating system reports a General Protection Fault (GPF) when it detects that an application has attempted write access to a memory location that belongs to another application or process. Potentially, a GPF is the consequence of a system corruption.

Solution For the diagnosis of GPFs, it is mandatory to record the exact error message and error address information in order to identify the part of an application program that caused the failure.

Windows allows tracking of GPFs with a utility called WinDebug (WinDbg).

Printing Problems

ChemStation print spooler hangs after an error occurred

Cause The Agilent ChemStation spooler does not continue after a print error has occurred.

Solution Try initializing the Agilent ChemStation spooler by typing the following command on the Agilent ChemStation command line:

```
_LoadServiceResetPrinting
```

The Agilent ChemStation spooler prompts you whether to cancel all pending print jobs. If you do not want to cancel the pending jobs, press **No**. If the printing error comes again, you need to save your work, close all applications, and restart Windows and the Agilent ChemStation to reinitialize the operating environment.

Printing in multi-instrument configurations

Cause When printing simultaneously from multiple Agilent ChemStation instruments (such as during a sequence), resource conflicts may result in printing errors.

Solution If you experience printing problems that appear to be related to a temporary shortage of available system resources as multiple programs print in parallel, you can reduce the Agilent ChemStation's frequency to hand back CPU control to another application by typing the following command on the Agilent ChemStation command line:

```
_LoadServiceChromSplYield 2000
```

This command specifies how often (in milliseconds) the Agilent ChemStation Spooler lets other application use the computer's CPU. The default value is 300 ms. Increasing this number increases the printing speed at the expense of user interface response and should only be used in automated mode.

You can make this setting permanent by adding it to a macro file called USER.MAC in the Agilent ChemStation core directory (default: C:\CHEM32\CORE). This executes the command automatically every time the

Agilent ChemStation is started. For further details on the customization possibilities associated with USER.MAC, please refer to the *Macro Programming Guide* available in the online help.

Recovering from printer hang-ups

Cause If for some reason the communication to the printer hangs and the printer therefore does not finish the current printout, there are two steps that have to be done.

Solution Depending on whether the printer is local at your PC or connected via a network:

- On a local printer do a reset on the printer panel itself, or
- On a networked printer you have to clear the network communication problem. This may involve checking the cables or the printer spooler on the network host machine, or resetting the printer panel itself.

On your PC the printer driver or the Windows Print Manager has to be reset. This is done by one of these alternatives:

- If there is a printer driver dialog box visible that has just a Printing... or similar message in it together with a Cancel button, press **Cancel**, or
- If instead there is the icon of the Windows Print Manager visible, close it, discarding the actual print jobs.

If the problem persists, try stopping and restarting the Windows Spooler Service. Select **Services** from the Windows Control Panel, scroll down the list and highlight **Spooler**. Choose **Stop** to stop the service and restart it again selecting **Start**.

When the Agilent ChemStation spooler reports printer errors, a message window displays the error messages, for example:

Printing problem 106, with page file:
c:\CHEM32\1\temp\~p3d0004.tmp

These failed print files can be printed with a command typed on the command line, for example:

```
MFPrint "c:\CHEM32\1\temp\~p3d0004.tmp"
```

Do not forget to delete these temporary files after you have printed them.

Printing Problem 100

Cause A file belonging to the current print job could not be found.

Solution Check the consistency of your hard disk's file structure.

Printing Problems 101, 102, 106, 108, 110, 210, 212, 300

Cause Due to low system resources or not enough available disk space, a print-file could not be accessed either in memory or on disk.

Solution Check free system resources using the Windows Task Manager. Press **Ctrl + Alt + Del** and select Task Manager. On the Performance Tab you will find the available physical memory. If free system resources are significantly below 30%, you should save your work, close all Windows applications, and restart Windows.

Printing Problem 104

Cause The print page could not be copied in memory.

Solution Check available memory on your computer.

Printing Problem 202

Cause The printer driver could not be initialized.

Solution Reset the Agilent ChemStation spooler and check the printer driver name and version of your printer. Refer to the list of tested printers on the Agilent ChemStation Software CD-ROM.

Check available system resources.

Printing Problem 204

Cause A print page could not be sent to the printer driver.

Solution Verify that your printer is correctly configured and connected and online.

Printing Problems 206, 208, 302

Cause Printer escape sequences to initialize a new page or indicate the end of a print job could not be sent to the printer driver.

Solution Verify that your printer is correctly configured, connected, and online.

Printing Problem 214

Cause A print job could not be removed from the print queue.

Solution Either the print job file does not exist in the temporary directory or the Agilent ChemStation print queue file (hpspl100.que) does not exist.

CAUTION The print queue file and Agilent ChemStation temporary files must not be deleted while the Agilent ChemStation is running.

Printing Problem 400, 401, 402, 403

Cause The Agilent ChemStation spooler could not be initialized properly.

Solution If this occurs as a consequence of previous errors, save your work, terminate all your applications, and restart Windows.

Parts of the chromatogram missing on the report or strange fonts in the report

Cause This may be caused by low system resources in Windows. Either too many applications are running or one or more applications have not freed up all the system resources that they allocated during their operation.

Solution Check the percentage free of system resources in the Windows Task Manager. When free system resources get below 30%, you should save your work, close all applications, and restart Windows.

Computer Problems

Sporadic hang-ups

Cause There may be inconsistencies in your hard disk file structure.

Solution Use CHKDSK (refer to your operating system help documentation) to verify that there are no inconsistencies in the file structure. If you find such inconsistencies on your PC's hard disk, correct them.

"Cannot create file..." error message

Cause The hard disk space may be low.

Solution Check the available disk space on your system. Delete unnecessary files, for example, left over temporary files or archive data files that you do not currently need to a backup medium.

Slow hard-disk access or hard-disk activity LED is continuously flickering

Cause Your hard disk may be fragmented.

Solution Use a defragmentation utility to reorganize the logical order of file clusters on your disk (refer to your operating system help documentation). If system performance is generally low and your hard-disk appears to be accessed very frequently for relatively long periods of time, the system is most probably low on RAM and using virtual memory (for example, the page file) excessively.

- Reduce the number of concurrent programs
- Use Computer Management options. For example:
  - **For Windows 2000 Professional**, right-click on **My Computer** icon and select **Manage.**
  - **For Windows XP Professional**, go to the Start menu, then right-click on **My Computer** and select **Manage**.
- Check whether your disk cache utility is installed and optimally configured

Agilent ChemStation performance degrades over time

Cause If your environment requires continuous routine operation of the Agilent ChemStation over days or even weeks without restarting Windows, the system performance may degrade over time due to memory and resource leaks in the system.

Solution To overcome this problem, we recommend rebooting the PC on a regular basis. Windows service packs are available from the Microsoft home page on the World Wide Web (http://www.microsoft.com).

7 Troubleshooting

8
Additional Resources

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This section provides an overview of the additional Agilent A/D ChemStation resources found on the Agilent ChemStation CD-ROM and the World Wide Web, including the Agilent Response Center Support Services, the Agilent Technologies Analytical Response Center, and the Agilent ChemStation help system.

Agilent Response Center

Support Services resolves problems and maximizes performance

Agilent Technologies offers different options to help you obtain the professional assistance you need to achieve maximum productivity with your Agilent Technologies analytical software. This Agilent Response Center Support Service is available worldwide from centers based in Australia, Europe, and the USA.

The Agilent Technologies network of Analytical Response Centers (ARCs) provides access to support professionals who help you resolve operational difficulties, and offer assistance and advice on running Agilent Technologies analytical software. Traditionally, this support is given over the telephone, but may also be extended to remote support via modem upon authorization.

Your Agilent Technologies analytical software includes complimentary Response Center support for a period of 90 days after installation of the product. The duration of the support may be extended to one year or longer at very competitive rates. In addition, you can sign up for a material update service entitling you to automatically receive any software revision upgrades when they are released, along with regular delivery of the Software Status Bulletins containing important information on known problems and available work-around solutions for your Agilent Technologies analytical software.

For more information on how to register for these services, please contact your local Analytical Support Representative.

Your local Analytical Support Representative will also provide information on available consulting, customization, development, and training services on Agilent Technologies analytical software products.

Agilent Technologies Response Center support and update services are subject to your local country's prices, terms, and conditions ruling at the time you place your order.

Calling the Agilent Technologies Analytical Response Center

When you call the Agilent Technologies Analytical Response Center, please be at your computer and have the product documentation at hand.

We recommend that the following information be readily available:

- The registration packet label with the product number, revision code, and license registration number of your analytical software
- The exact wording of any error messages that the system produced
- A list of the instrument modules including firmware revisions that are connected to the PC. You may use the serial number information from the Agilent ChemStation [Method/Run Control>Instrument> and select **Serial Numbers and Columns** (in Full Menu view only)] to generate this list.
- A full printout from Windows System Information
- A description of the scenario that leads to the failure

Contents of the Agilent ChemStation CD-ROM

The Agilent A/D ChemStation CD-ROM contains extra updated information that may be of interest to you when installing your system. Refer to the following for additional information, if necessary.

Agilent ChemStation Modules

The CD-ROM contains the executable files for all modules that belong to the Agilent ChemStation product family. In order to install a module, you have to supply a license registration number valid for the module. Those numbers “unlock” the protected CD-ROM. They are included with the original product and are your proof of license.

There is a main setup program setup.exe for the Agilent ChemStation modules located in the root directory on the Agilent ChemStation CD-ROM.

Agilent ChemStation Software Status Bulletin

The Software Status Bulletin is a document reflecting the results of Agilent Technologies defect logging, tracking, and repair methodology by publishing the current status of Agilent ChemStation application software products (known defects and additional information).

The SSB is located in the Support\SSB directory of the Agilent ChemStation CD-ROM.

If you have a software contract, you will receive the Agilent ChemStation *Software Status Bulletin*.

Agilent ChemStation Revision History

The revision history is targeted towards users who may have to consider revalidating their analytical data system after upgrading to a new revision of the application software. The *Revision History* contains the revision history of all products that are part of the Agilent ChemStation product family.

The history files are located in the Support\History directory of the Agilent ChemStation CD-ROM.

User-Contributed Library

The contents of this library are intended to help users develop and customize the installations for their specific needs to get the most out of their investment.

The content of the library comes from both Agilent internal and user-contributed sources. Each contribution is checked for functionality but does not necessarily go through the same level of formal testing procedures as the actual product. Therefore, Agilent Technologies does not guarantee the correctness of the contributions.

The *User-Contributed Library* comprises utilities and macros. Each contribution is delivered with a specific README.TXT file that can be viewed using any text editor.

Agilent Bootp Service

The Agilent ChemStation CD-ROM contains the Agilent Bootp Service setup that can be used to supply the analytical instruments connected to a LAN an IP address and configuration settings. The Agilent Bootp Service is easy to configure for the use of analytical instruments using a LAN connection. Refer to Chapter 3, “Installing Agilent Bootp Service,” starting on page 19 for more information about the Agilent Bootp Service.

Agilent ChemStation Product Documentation

The Agilent ChemStation product documentation consists of paper handbooks with reference information and online documentation for task-orientated topics. The paper manuals are also located on the CD-ROM in the directory manuals, together with the required Adobe Acrobat reader.

Learning Products

A wide range of learning products are supplied with your Agilent ChemStation software.

Documents

- This and other *Installing* handbooks describe how to prepare your Agilent ChemStation for operation by installing the necessary hardware and software. *Installing* books are specific to various modules that may be incorporated into the Agilent ChemStation. You may receive more than one with your shipment.
- The *Understanding Your ChemStation* handbook provides a discussion of Agilent ChemStation concepts to increase your understanding of how the Agilent ChemStation works.
- An online *Macro Programming* guide describes how to work with this powerful command set to customize and expand the capabilities of your Agilent ChemStation. Open the Agilent ChemStation help system and navigate to *Macros* to view this guide.
- The XML interface is fully documented in the *Agilent ChemStation XML Interface Guide*, available as a PDF document in the manuals folder on your Agilent ChemStation CD-ROM.

Related setup and maintenance information

- A README file contains information on items such as added new features, known work-arounds, and corrections that could not be included in this manual at the time of printing. To access the readme.txt file from the Start menu in the Task Bar, go to Start>Programs>Agilent ChemStation> and select **readme.txt**.
- An automatically updated *Logbook* contains any error condition discovered during operation and corrective actions (if required). To access, choose *Logbook* from the View menu, then double-click the entries. The most recent entries are at the top of the list.
- A *User-Contributed Library* containing utilities and macros created by internal and user contributed sources to help you customize your installation to meet your specific needs.
- Microsoft Windows XP Professional or Windows 2000 Professional online help and handbooks.
- Hardware handbooks for each instrument, including the PC.

Agilent ChemStation Help System

The Agilent ChemStation help system provides an extensive material database of information under the following menu items:

- *How to work with your ChemStation* contains a set of instructions for your Agilent ChemStation. You can learn how to perform tasks for the method and run control, data analysis, report layout, verification (OQ/PV), and diagnosis view features.
- *User Interface Reference* contains a detailed description of all items in the menus, toolbars, and dialog boxes of the Agilent ChemStation software. The descriptions are sorted by the different Agilent ChemStation views.
- *Concepts of ChemStation* contains information on selected concepts of the Agilent ChemStation software, including integration, calibration, calibrated report types, spectra processing, and peak parameters.
- *Error Messages* lists all instrument error messages that may occur, with possible causes and corrective actions.
- *Troubleshooting* provides information that can help solve common problems with your Agilent A/D ChemStation.
- *Commands* contains an extensive list of commands and the name, group, syntax, parameters, discussion, return value, and examples (where possible) of different tasks in the Agilent ChemStation software.
- *Macros* contains the *Macro Programming Guide*, which explains the purpose and basic structure of a macro and how macros are written using command strings. Macros allow you to customize the Agilent ChemStation software to best fit your needs.

Accessing help

The Agilent ChemStation help system is accessible for two uses:

- **To use the Agilent ChemStation help system to find content-specific information for any Agilent ChemStation screen**, click the **Help** button or press the **<F1>** key.
- **To use the Agilent ChemStation help system as a user reference guide**, go to Help> and select **Help Topics** on the Agilent ChemStation menu bar.

More information

For more information, visit the Agilent web site at http://www.agilent.com/chem.

8 Additional Resources

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